O'BRIEN & GERE

August 1, 2011

Michelle Mullin
USEPA Region V
RCRA Permitting Section
DW-8J
77 West Jackson Boulevard
Chicago, IL 60604

Re: General Electric Company
GE Aircraft Engines
OHD 000 817 312
Baseline Statistical Evaluation

Dear Ms. Mullin:

On behalf of GE Aviation (GE), O'Brien & Gere is pleased to present the following summary of the baseline statistical evaluation conducted for the GE facility in Evendale, Ohio. The baseline statistical evaluation was conducted in accordance with the statistical methods presented in Appendix B of the IRM Performance Monitoring Plan (PMP, O'Brien & Gere, 2010). The objective of the baseline (pre-pumping) statistical evaluation was to prepare a baseline dataset of groundwater monitoring data collected before IRM startup for comparison with groundwater monitoring data collected after IRM startup. To achieve this objective, work was performed:

- To evaluate the sufficiency of the existing baseline data set and the need, if any, for collection of additional data prior to the start up of the IRM system
- To evaluate the distribution of the baseline data set
- To evaluate and remove, as necessary, outliers from the baseline data set
- To establish 95% upper tolerance limits (UTLs) utilizing the baseline data set

The statistical evaluation methods utilized in the baseline statistical evaluation included:

- Consolidation of the available data on an individual well basis, which was accomplished by:
  - Tabulating the baseline (pre-pumping) groundwater monitoring concentration data (in µg/L) for TCA and its daughter products, and TCE and its daughter products
  - Converting individual constituent concentrations (µg/L) to molar concentrations (in micromoles per liter [µmol/L]) by dividing the total mass of each constituent by its molecular weight
  - Calculating the total molar concentration for the TCA group and the TCE group for each sampling event for each individual monitoring well
  - Performing statistical analysis on the TCA Group (1,1,1-TCA; 1,1-DCA; 1,1-DCE; Chloroethane) and the TCE Group (TCE; sis-1,2-DCE; trans-1,2-DCE; PCE; VC) total molar concentration data
- Evaluation of the distribution of the data through:
  - Graphing the raw data utilizing quantile-quantile (Q-Q) plots, or other graphical plots

  - Conducting a goodness-of-fit statistical test (*e.g.*, Shapiro Wilk test) on the available data for each well and group
  - Determining whether the data were normally or lognormally distributed, or exhibited no statistical distribution (*i.e.*, were non-parametric in nature)
- Conducting outlier testing to remove outliers, if any, which was an iterative process coupled with the data distribution evaluation, and included:
  - Reviewing the graph(s) of raw data (Q-Q plots or other graphical plots) to visually identify suspected outliers
  - Testing the normality of the data without the suspected outliers
  - Conducting the appropriate outlier test (*e.g.*, Dixon test or Rosner) on the entire data set (including suspected outlier[s])
- Data exhibiting a lognormal distribution was transformed and further statistical evaluation was conducted on the lognormal data set
- Determining the number of valid samples to evaluate the sufficiency of the data. If the existing data set was sufficient, then the baseline 95% Upper Tolerance Limit (UTL) was determined; otherwise, if insufficient, then additional monitoring data was collected, and then the baseline evaluation was updated following the receipt of the additional monitoring data
- Calculating the 95% UTL was accomplished utilizing one of the following methods depending on the distribution of the baseline analytical data:
  - For Normal and transformed Lognormal data the UTL was calculated as UTL = mean + [k * stdev], where the k-value was obtained from the USEPA Unified Statistical Guidance of March 2009
  - For non-parametric data the UTL defaulted to the valid sample with the largest molar concentration
  - If no valid samples exist (*i.e.*, all results are non-detect), then the sum of the reporting detection limits (RDL) of the TCA Group or TCE Group as appropriate were utilized
- The USEPA approved ProUCL (ver. 4.00.05) (USEPA, 2009) software was utilized in the baseline statistical evaluation to create the graphs of the analytical data and conduct the goodness-of-fit, distribution, and outlier tests

A number of challenges occurred during the baseline statistical evaluation including that the USEPA guidance recommends utilizing 8 to 10 valid data points, and although at least 10 sample events have been conducted at each location, non-detects and/or outlier results may have restricted the valid data points for an individual well location to less than 8 samples in a few cases. Sufficient data exist for 83 percent (120 of 144) of the TCA and TCE Groups included in the baseline statistical analysis, and generally sample groups without at least 8 valid data points were caused by non-detects and/or the removal of outliers, and the UTL was calculated based on the existing data set. For several of the wells without sufficient valid samples within one or both of the sample groups it is unlikely that conducting additional sampling event(s) would produce a greater percentage of TCA and TCE Groups with sufficient data points.

The data were more often normally or lognormally distributed than non-parametric, and although about half of the non-parametric data were due to low valid sample availability, the rest were due to highly variable analytical results.

The attached table summarizes the total number of samples utilized in the baseline statistical evaluation, the number of pre-2000 samples and post-2000 samples utilized in the evaluation, the number of non-detect samples and the number of outliers, if any, identified for each sample group. The table also summarizes the baseline statistical evaluation results including each sample group's minimum, maximum, mean and median molar concentrations (in µmol/L), the standard deviation of the baseline data, and the UTL (in µmol/L) for each sample group, which is the ultimate result of the baseline statistical evaluation.

The baseline statistical UTL values will be utilized during the operation of the IRM system in accordance with the PMP. Specifically the baseline statistical data will be utilized to evaluate the chemical data collected during the operation of the IRM to address the following questions as outlined in the PMP:

- Is vertical cross-contamination occurring?
- Are IRM influent concentrations stable or decreasing?
- Are potential off-site sources inhibiting remediation?

If you have any questions or require additional information, please contact me at (248) 477-5701, extension 16.

Very truly yours,
O'Brien & Gere Engineers, Inc.

Clifford Scott Yantz

Clifford S. Yantz
Technical Associate

cc: Susanne Herald- GE
Ed Kolodziej- GE
Scott Cormier- O'Brien & Gere Engineers, Inc.

Evendale, Ohio

Groundwater Statistical Summary and UTL Calculation

Well ID	Total Samples	Samples Collected pre-2000	Samples Collected post 2000	TCA_grp NDs (post-2000)	TCA_grp Outliers[2] (post-2000)	TCA_grp Valid Samples	TCA_grp Data Distribution	TCA_grp Minimum Value (µmol/L)	TCA_grp Maximum Value (µmol/L)	TCA_grp Mean Value (µmol/L)	TCA_grp Median Value (µmol/L)	TCA_grp Std. Dev. Value (µmol/L)[13]	TCA_grp UTL Value[1,2,3,4,5] (µmol/L)	TCE_grp NDs (post-2000)	TCE_grp Outliers[2] (post-2000)	TCE_grp Valid Samples	TCE_grp Data Distribution	TCE_grp Minimum Value (µmol/L)	TCE_grp Maximum Value (µmol/L)	TCE_grp Mean Value (µmol/L)	TCE_grp Median Value (µmol/L)	TCE_grp Std. Dev. Value (µmol/L)[13]	TCE_grp UTL Value[1,2,3,4,5] (µmol/L)	Was Additional Sampling Helpful?[6]
AF-11S	22	5	17		1	16	Normal[1]	.0063	.0671	.0344	.0370	.0197	.0842			17	Non-Parametric[2]	.0358	3.1943	1.3583	.9379	1.2616	3.1943	
AF-12P	14	2	12	12		0	Non-Detect[3]	--	--	--	--	--	RDL	12		0	Non-Detect[3]	--	--	--	--	--	RDL	
AF-12S	19	4	15			15	LogNormal[4]	0.0599	1.0055	0.1990	0.1581	1.0270	2.7754			15	Normal[1]	.1158	3.3399	1.2729	1.2496	.9492	3.7086	
AF-15D	19	5	14			14	LogNormal[4]	0.0062	0.0378	0.0152	0.0155	0.4430	0.0485			14	Normal[1]	.0199	.1469	.0812	.0840	.0403	.1864	
AF-15S	15	4	11	1		10	LogNormal[4]	0.0310	3.3720	0.2199	0.1171	1.5510	20.0950			11	Normal[1]	3.9972	11.8930	8.4309	9.2884	2.4287	15.2677	
AF-1D	12	2	10			10	Normal[1]	.0171	.1120	.0456	.0349	.0296	.1316	8		2	Non-Parametric[5]	.0141	.0145	.0143	.0143	.0003	.0145	Yes[9]
AF-1P	15	2	13			13	Normal[1]	.0063	.0809	.0379	.0274	.0275	.1114			13	Normal[1]	.0084	.1813	.0737	.0705	.0501	.2074	
AF-1S	17	4	13	1		12	Normal[1]	.0431	1.7954	.8428	.8723	.6668	2.6671	1		12	Normal[1]	.0095	1.4339	.5701	.5282	.4792	1.8813	
AF-21D	15	1	14	1	2	11	Normal[1]	.0037	.0063	.0048	.0047	.0008	.0070			14	LogNormal[4]	0.0885	0.3626	0.1565	0.1388	0.4640	0.5265	Yes[8]
AF-23P	18		18		1	17	Normal[1]	3.3308	10.2320	6.2346	6.1027	1.7850	10.6721		1	17	Normal[1]	2.2495	5.9863	4.3382	4.4281	.8973	6.5688	Yes[7]
AF-24P	16		16			16	Normal[1]	.8304	14.8510	6.4094	5.6478	4.6247	18.0821			16	Normal[1]	.8360	7.1586	4.3536	4.8012	2.2199	9.9566	Yes[7]
AF-25P	16		16			16	Normal[1]	2.4369	11.0490	5.6114	5.5311	2.6810	12.3782			16	Normal[1]	1.8849	9.6251	5.0343	4.5166	2.5157	11.3839	Yes[7]
AF-2P	25	2	23			23	Normal[1]	.0420	.1014	.0665	.0662	.0176	.1073			23	Normal[1]	.1978	.5673	.3466	.3686	.0888	.5533	Yes[7]
AF-2S	15	4	11			11	Normal[1]	.1295	.3832	.2504	.2501	.0830	.4842			11	Normal[1]	.7240	1.5862	1.3049	1.3651	.2767	2.0838	
AF-3P	16	1	15			15	Normal[1]	.2203	.7921	.5200	.5168	.1648	.9429			15	Normal[1]	.4639	1.2907	.9656	.9888	.2497	1.6063	Yes[7]
AF-4S	18	4	14		2	12	Normal[1]	.4909	1.0746	.7067	.6739	.1749	1.1853			14	Normal[1]	1.7816	4.8235	3.2973	3.5633	1.0120	5.9427	
AF-5D	20	2	18	15		3	Non-Parametric[5]	.0065	.0155	.0120	.0141	.0048	.0155	15		3	Non-Parametric[5]	.0007	.0044	.0029	.0038	.0020	.0044	Yes[8]
AF-5P	32	6	26		1	25	Normal[1]	.8206	1.3528	1.0325	1.0420	.1490	1.3739		1	25	Normal[1]	2.1346	4.6022	3.1832	3.1065	.6087	4.5782	Yes[7]
AF-5S	36	8	28			28	LogNormal[4]	0.2607	2.0249	0.7229	0.7229	0.5650	2.5715		1	27	Normal[1]	1.9158	9.1182	4.8592	4.8363	1.8649	9.0739	Yes[7]
AF-7D	21	3	18	14		4	Non-Parametric[5]	.0087	.0240	.0167	.0170	.0063	.0240	10	1	7	Normal[1]	.0026	.0176	.0106	.0110	.0046	.0261	No[10]
AF-7P	31	4	27			27	Normal[1]	3.2903	10.9400	6.9532	6.9080	1.7381	10.8813		1	26	Normal[1]	3.1033	9.5664	6.1737	5.6520	1.5727	9.7516	Yes[7]
AF-7S	33	5	28			28	Non-Parametric[2]	.1617	.7677	.3838	.2896	.1990	.7677			28	Non-Parametric[2]	11.3520	31.8240	24.0320	24.4490	5.0922	31.8240	Yes[7]
AF-8S	22	7	15	4		11	Normal[1]	.0020	.0375	.0178	.0191	.0129	.0541	1		14	LogNormal[4]	0.0014	0.2244	0.0225	0.0216	1.5240	1.2083	
AF-9S	31	6	25	1		24	Non-Parametric[2]	.0030	.0694	.0167	.0064	.0187	.0694			25	LogNormal[4]	0.0053	0.3590	0.0876	0.0940	0.9590	0.7894	Yes[7]
AOC LDMW-1S	24	1	23			23	LogNormal[4]	0.2881	33.2984	4.9308	3.5805	1.1200	66.8780			23	LogNormal[4]	0.3121	12.2498	3.1756	2.7608	0.8150	21.1752	Yes[7]
AOC PSTMW-2S	24	2	22		1	21	Normal[1]	.0914	.6916	.2896	.2814	.1557	.6589		2	20	Normal[1]	.0147	.2591	.1096	.0990	.0750	.2892	Yes[7]
GM-3D	12	2	10	9		1	Non-Parametric[5]	.0130	.0130	.0130	.0130	n/a[12]	.0130	9		1	Non-Parametric[5]	.0067	.0067	.0067	.0067	n/a[8]	.0067	
GM-9S	14	3	11	2	1	8	Normal[1]	.0086	.0232	.0143	.0130	.0061	.0337		1	10	Normal[1]	.8521	2.0674	1.2772	1.1749	.3968	2.4322	Yes[8]
H-221	18		18			18	Normal[1]	.0576	.7426	.3718	.3813	.1721	.7940			18	Normal[1]	.0660	.9393	.5129	.5475	.2035	1.0121	Yes[7]
H-222	14		14		1	13	Normal[1]	.5371	.9081	.6966	.6648	.1176	1.0107			14	Normal[1]	1.7467	2.3119	1.9916	1.9679	.1637	2.4195	
OSMW-10D	12		12	5		7	Normal[1]	.0045	.0977	.0495	.0446	.0335	.1633			12	Normal[1]	.0229	.1156	.0512	.0426	.0277	.1269	Yes[8]
OSMW-10P	11		11		1	10	Normal[1]	2.6420	3.5967	3.1374	3.2157	.2934	3.9915		1	10	Normal[1]	1.8329	2.4497	2.2009	2.2266	.2013	2.7868	
OSMW-10S	11		11			11	Normal[1]	.4118	2.6707	1.6912	1.7599	.6572	3.5411		1	10	Normal[1]	.6798	1.0583	.8585	.8519	.1229	1.2163	
OSMW-11D	10		10			10	Non-Parametric[2]	.1112	.7604	.5384	.6545	.2551	.7604			10	Non-Parametric[2]	.1424	8.2552	5.3159	6.9012	3.4304	8.2552	Yes[7]
OSMW-11DD	10		10			10	Normal[1]	.0162	.4195	.2573	.2670	.1281	.6301			10	Normal[1]	.0676	4.2917	2.4949	2.6842	1.2652	6.1779	Yes[7]
OSMW-11P	10		10			10	Normal[1]	.0111	.0202	.0161	.0162	.0024	.0232	7		3	Non-Parametric[5]	.0046	.0066	.0058	.0061	.0010	.0066	Yes[9]
OSMW-11S	10		10			10	LogNormal[4]	0.4564	0.8829	0.5744	0.5197	0.2030	1.0371			10	LogNormal[4]	4.7375	10.2319	6.0831	5.5595	0.2330	11.9864	Yes[7]
OSMW-12D	10		10	10		0	Non-Detect[3]	--	--	--	--	--	RDL		1	9	Normal[1]	.3535	.4655	.4098	.4118	.0334	.5112	Yes[8]
OSMW-12DD	10		10		2	8	Normal[1]	.0449	.0494	.0472	.0475	.0015	.0520	1	1	8	Normal[1]	.0227	.0273	.0250	.0246	.0017	.0303	Yes[7]
OSMW-12P	10		10		2	8	Normal[1]	.0472	.0507	.0493	.0495	.0011	.0529	1	1	8	Normal[1]	.0273	.0324	.0296	.0288	.0018	.0352	Yes[7]
OSMW-12S	10		10		1	9	Normal[1]	.7412	.8951	.8304	.8507	.0559	.9999			10	Normal[1]	2.7211	4.2220	3.2668	3.1531	.4704	4.6360	Yes[7]
OSMW-13D	10		10			10	Normal[1]	.0485	.2716	.1364	.0922	.0870	.3895			10	Normal[1]	.0615	5.5870	2.6308	2.8954	1.8184	7.9242	Yes[7]
OSMW-13DD	10		10			10	Normal[1]	.0354	.4546	.1991	.1711	.1344	.5903			10	Normal[1]	.3647	5.5318	3.2867	3.5135	1.5211	7.7146	Yes[7]
OSMW-13P	10		10		1	9	Normal[1]	.0424	.0475	.0447	.0455	.0021	.0510			10	Non-Parametric[2]	.0330	.0688	.0426	.0392	.0108	.0688	Yes[7]
OSMW-13S	10		10			10	Normal[1]	.2207	.4766	.3669	.3898	.0863	.6181			10	Normal[1]	4.1638	7.3253	5.6984	5.7638	1.0647	8.7977	Yes[7]
OSMW-1D	21		21			21	Normal[1]	.0313	1.1116	.4072	.4042	.2754	1.0602			21	Normal[1]	2.7915	18.8760	13.1180	13.3280	4.4104	23.5751	Yes[7]
OSMW-1P	18		18			18	LogNormal[4]	0.0280	0.0390	0.0310	0.0307	0.0893	0.0386	2		16	Normal[1]	.0018	.0342	.0156	.0125	.0090	.0383	Yes[9]
OSMW-1S	21		21			21	Non-Parametric2	.1314	1.8189	.7051	.6158	.3397	1.8189			21	Normal[1]	19.7690	51.3320	32.4550	29.4480	9.1342	54.1122	Yes[7]
OSMW-2P	17		17		2	15	Normal[1]	.0785	.1454	.1116	.1109	.0170	.1552		1	16	Normal[1]	.3608	.8594	.5376	.5126	.1299	.8655	No[11]

GE OHD 000 817 312
Evendale, Ohio
Groundwater Statistical Summary and UTL Calculation

Well ID	Total Samples	Samples Collected pre-2000	Samples Collected post 2000	TCA_grp NDs (post-2000)	TCA_grp Outliers[2] (post-2000)	TCA_grp Valid Samples	TCA_grp Data Distribution	TCA_grp Minimum Value (µmol/L)	TCA_grp Maximum Value (µmol/L)	TCA_grp Mean Value (µmol/L)	TCA_grp Median Value (µmol/L)	TCA_grp Std. Dev. Value (µmol/L)[13]	TCA_grp UTL Value[1,2,3,4,5] (µmol/L)	TCE_grp NDs (post-2000)	TCE_grp Outliers[2] (post-2000)	TCE_grp Valid Samples	TCE_grp Data Distribution	TCE_grp Minimum Value (µmol/L)	TCE_grp Maximum Value (µmol/L)	TCE_grp Mean Value (µmol/L)	TCE_grp Median Value (µmol/L)	TCE_grp Std. Dev. Value (µmol/L)[13]	TCE_grp UTL Value[1,2,3,4,5] (µmol/L)	Was Additional Sampling Helpful?[6]
OSMW-3D	21		21	12		9	Normal[1]	.0276	.0731	.0530	.0518	.0145	.0969			21	Non-Parametric2	3.0330	13.9650	10.9090	11.6770	1.1192	13.9650	Yes[7]
OSMW-3S	19		19	1		18	LogNormal[4]	0.0059	0.0526	0.0159	0.0149	0.7310	0.0952			19	LogNormal[4]	0.0175	0.4609	0.0851	0.0834	0.9310	0.8117	Yes[8]
OSMW-4D	20		20			20	Normal[1]	.0735	.1782	.1164	.1124	.0308	.1902			20	Normal[1]	.6227	1.1121	.8824	.9035	.1487	1.2387	Yes[7]
OSMW-4S	20		20	1		19	Normal[1]	.0152	.0991	.0625	.0596	.0231	.1184			20	Normal[1]	.5057	6.7176	3.9786	3.9820	1.6115	7.8398	Yes[7]
OSMW-5D	17		17	11		6	Non-Parametric[5]	.0063	.0225	.0100	.0080	.0062	.0225		2	15	Normal[1]	2.0708	3.6524	2.9872	2.9831	.4076	4.0331	Yes[7]
OSMW-5S	18		18	1		17	Normal[1]	.0068	.0176	.0118	.0121	.0027	.0186			18	Normal[1]	.1236	.1759	.1465	.1473	.0138	.1804	Yes[7]
OSMW-6D	18		18			18	Normal[1]	.1270	.7170	.4089	.3754	.1604	.8025			18	Normal[1]	.6177	3.4674	1.9485	1.8726	.7548	3.8001	Yes[7]
OSMW-6S	17		17			17	Normal[1]	.2988	1.0410	.7395	.7316	.1812	1.1900			17	Normal[1]	.5365	1.7277	1.2674	1.2814	.3046	2.0246	Yes[7]
OSMW-7D	16		16	16		0	Non-Detect[3]	--	--	--	--	--	RDL	1		15	Non-Parametric[2]	.0126	.1744	.1277	.1422	.0458	.1744	Yes[8]
OSMW-8D	17		17	14		3	Non-Parametric[5]	.0018	.0034	.0027	.0028	.0008	.0034	1		16	Normal[1]	.1374	.5472	.3551	.3448	.1296	.6823	Yes[8]
OSMW-8S	17		17			17	Normal[1]	.0060	.0241	.0155	.0166	.0046	.0268			17	LogNormal[4]	0.0157	0.6099	0.0969	0.1256	1.0570	1.3407	Yes[7]
OSMW-9D	10		10	10		0	Non-Detect[3]	--	--	--	--	--	RDL		1	9	Normal[1]	.2240	.4000	.3022	.2880	.0539	.4657	No[11]
OSMW-9S	11		11	9		2	Non-Parametric[5]	.0245	.0327	.0286	.0286	.0058	.0327	3	1	7	LogNormal[4]	0.0155	2.2830	0.0921	0.0516	2.0150	86.8772	Yes[7]
PMW-2D	10		10	9		1	Non-Parametric[5]	.0021	.0021	.0021	.0021	N/A	.0021	10		0	Non-Detect[3]	--	--	--	--	--	RDL	
PMW-3D	11		11		1	10	Normal[1]	1.9282	2.7194	2.3891	2.4236	.2597	3.1451		1	10	Normal[1]	1.5728	2.3565	1.8764	1.8670	.2258	2.5338	
PMW-3P	12		12		1	11	Normal[1]	1.6675	2.3660	1.9301	1.8517	.2194	2.5478		2	10	Normal[1]	3.3141	3.8334	3.5074	3.4339	.1930	4.0693	Yes[7]
PMW-3S	11		11			11	Normal[1]	.9980	1.9055	1.4249	1.2534	.3164	2.3156			11	Normal[1]	.8554	1.9230	1.5069	1.5608	.2836	2.3051	
PMW-4D	10		10	10		0	Non-Detect[3]	--	--	--	--	--	RDL			10	Normal[1]	.0704	.1120	.0877	.0840	.0121	.1228	
TMW-1D	16		16	16		0	Non-Detect[3]	--	--	--	--	--	RDL	6		10	Non-Parametric[2]	.0014	.0093	.0033	.0017	.0028	.0093	No[11]
TMW-1S	16		16			16	LogNormal[4]	0.0254	0.1231	0.0559	0.0542	0.5880	0.2465			16	Normal[1]	.7600	9.5855	4.2727	3.6679	2.4951	10.57	Yes[7]
TMW-2D	16		16	9	1	6	Normal[1]	.0014	.0222	.0104	.0095	.0094	.0454	2		14	Non-Parametric[2]	.0009	9.8486	3.1851	2.5820	3.2571	9.85	Yes[8]
TMW-2P	14		14	3	2	9	Normal[1]	.0034	.0261	.0163	.0162	.0063	.0353	1	2	11	Normal[1]	.0037	.0609	.0316	.0350	.0194	.0862	Yes[8]
TMW-2S	16		16	8	1	7	Normal[1]	.0012	.0029	.0020	.0021	.0005	.0039	7		9	Normal[1]	.0015	.0175	.0081	.0067	.0057	.0254	No[11]

Footnotes:

1. The upper tolerance limit (UTL) for a normal data distribution is calculated as UTL=mean + (k*stdev). See note C regarding the k-value.
2. Data distribution is non-parametric due to the wide/random spread of valid samples. The upper tolerance level (UTL) defaults to the valid sample with the largest mass concentration.
3. All samples are non-detect. The upper tolerance level (UTL) defaults to the sum of the reporting detection limits (RDL) of the individual constiuents that comprise either the TCA-group or the TCE-Group.
4. Upper tolerance limit for a lognormal data distribution is calculated as UTL=mean + (k*stdev) where the mean and standard deviation are derived from a natural log transformation of the data. See note C regarding the k-value.
5. Data distribution is non-parametric due to an insufficient number of valid samples. The upper tolerance level (UTL) defaults to the valid sample with the largest mass concentration.
6. Notes whether the additional sampling conducted this year has been beneficial to the data set for that well.
7. The additional sample increased the data set for both constituent groups.
8. The additional sample increased the data set for the TCE group.
9. The additional sample increased the data set for the TCA group.
10. The additional sample did not increase the data set for either group.
11. The additional sample created an additional outlier or was non-detect.
12. There was only one detect sample for this well, therefore a standard deviation could not be calculated.
13. The standard deviation for lognormal is based on the log-transformed data.

General Notes:

A. Outlier screening and testing was completed using ProUCL (ver. 4.00.05). ProUCL uses either the Dixon outlier test or Rosner's outlier test depending on the number of valid samples. Outliers at the 5% and 1% significance level were excluded from the data set.
B. Summary statistics were calculated using ProUCL (ver. 4.00.05).
C. K-value derived from Table 17-4 of Appendix D of the March 2009 Unified Guidance, "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities" published by USEPA.
D. Data prior to 2000 were excluded due to changes in laboratory equipment and procedures, improved detection limits, improvements in sample collection procedures. Removing the pre-2000 data from the calculation of the UTL provides for a more cohesive and representative data set.
E. Constituents comprising the TCA-Group include: 1,1,1-TCA; 1,1-DCA; 1,1-DCE; Chloroethane.
F. Constituents comprising the TCE-Group include: cis-1,2-DCE; PCE; trans-1,2-DCE; TCE; VC.